

Appendix 4

VMEPs

VOLUNTARY MOBILE EMISSION REDUCTION PROGRAM (VMEP)

A summary of the expected emission reductions from voluntary programs is shown in the table below for 2009. A description of each initiative and the progress through the middle of 2009 is outlined in subsequent summaries of each program.

Overall, the expected emission reductions from voluntary programs are expected to be 2.82 tpd NOx by the end of 2009 with most of the VOC and NOx emission reductions from on-road sources through H-GAC administered programs.

Summary of VMEP Measures that were included in last revision of HGB Attainment Demonstration SIP

.Progress to date, through June 2009, using 2009 emission rates- Expired projects have been removed

Measure	Description	VOC Reduction in 2009	NOx Reduction in 2009	Progress to Date and Future Plans
Vehicle Scrappage	Emission reductions through H-GAC administered LIRAP to repair or replace high emitting vehicles.	0.40	0.41	Includes benefits from vehicles scrapped estimated to occur in 2006 – 2009 under the current program.
Clean Cities / Vehicle Program	Public and private heavy-duty engine/vehicle replacement/retrofit	0.00	2.9	CMAQ funded projects through mid 2009
Commute Solutions	Van pools, additional transit, alternative commuting, and other initiatives	0.17	0.15	Additional commuting initiatives begun in 2004
Total Emission Reduction		0.57 tpd	3.46 tpd	
Total On-road Emission Reduction		0.57 tpd	3.46 tpd	

Vehicle Scrappage

Summary of Strategy: Sources of emission reductions include the Low Income Repair and Assistance Program (LIRAP). H-GAC is administering LIRAP on behalf of Brazoria, Harris, Fort Bend, Galveston and Montgomery counties. For administering the program, H-GAC claims the emission reductions achieved From January 2006 thru June 2009, there have been 11,543 repairs and 10,891 retire/replacements for a total of 22,434 vehicles in the program over the previous three years representing 3.5% of the failure vehicles

To the extent that LIRAP reduces the inspection waiver rate and therefore overall emissions is not credited here because TCEQ has indicated that vehicles would have been repaired regardless of whether the subsidy existed or not. EPA issued guidance that the life of the emission reduction from scrappage programs should be no more than 3 years. So emission reductions begun in 2006 would still be valid for 2009.

Status: H-GAC has been administering this program at least since 2002, and the progress to date includes a large number of repairs and replacement vehicles. For a three-year period, about 22,434 vehicles would be repaired and or replaced Therefore the estimated reduction for 2009 for this program is estimated at averaging 0.40 VOC and 0.41 NOx tons per day. for repaired and replaced vehicles.

Continued Implementation: The program continues to be implemented as a benefit to society.

Sample Calculation: The expected emission reduction was determined using an NCTCOG analysis of the average age of the replaced and replacement vehicles and EPA's estimate of light-duty vehicle emissions rates. The emission rates and activity in miles per years were distributed across all light-duty vehicle types to produce one average estimated emission reduction.

Table. LIRAP retired vehicles average NOx emissions (g/mile) and reduction calculated for calendar year 2009.

Fleet Description	LDGV	LDGT1	LDGT2	LDGT3	LDGT4
Retire Vehicles (g/mile)	1.67	1.88	2.14	2.09	2.31
Replacement Vehicles (g/mile)	0.95	1.03	1.39	1.53	1.97
17-year old vehicle activity average (Miles/Year)	6,636	5,909	5,909	6,827	6,827
NOx Emission Reduction (tpy/vehicle)	-0.0053	-0.0055	-0.0049	-0.0042	-0.0026
HGB Area daily mileage accumulation (registration x mileage)	88,469,793	8,396,334	27,951,516	7,152,769	3,289,307

Clean Cities / Clean Vehicles Program

Summary of Strategy: H-GAC is aggressively pursuing participation from public and private fleet owners in implementing low-emission technology introduction into vehicle fleets (primarily heavy-duty trucks

and buses) and fueling infrastructure through the Clean Cities/Clean Vehicles program (<http://www.houston-cleancities.org/>). Federal funds (Congestion Mitigation and Air Quality – CMAQ) are available for eligible projects using approved technology to reduce smog-forming emissions from on-road motor vehicles. This program has been highly successful in implementing emission controls from on-road mobile sources.

Status: Progress through 2009 is 2.9 tpd of NOx reductions with over \$50 million committed to these projects.

Continued Implementation: Additional funding (\$10 million is available to spend with the current progress to date) and program participation will be needed to reach an overall goal of greater than 3 tpd from this measure for public and private fleets, but participation and interest continues to be high.

Sample Calculation: The emission reductions were determined using the before and after retrofit/replacement engine emission rate and the annual mileage of the vehicle. Each vehicle type was calculated individually and summed to determine the progress of the program. The emission rate accounts for the use of TX LED and other unique characteristics of the Houston-Galveston area emissions evaluation. The before and after emission rates were calculated using the EPA MOBILE6 model using the input files used by TCEQ but using the by-model-year output format.

Sample Jetco Delivery (replacement of 1996 engine with a 2008 engine)

$$NOx \text{ Emission Reduction} = (26.467 - 2.653) \text{ (g/mile)} \times 71,416 \text{ (miles)} = 2.583 \text{ tpy}$$

Table. Clean Vehicles Projects Description

Applicant	Project Description	Total project cost	Eligible CMAQ funds	Emission Reduction (tpy)
Advanced Gas	2 Heavy-Duty Truck Replacements	\$120,000	\$64,699	0.69
Airgas	19 Heavy-Duty Truck Replacements	\$832,795	\$624,596	5.57
Allied Concrete	50 Heavy-Duty Truck Replacements	\$2,290,500	\$1,717,875	20.76
American Corrugated Box Company	2 Heavy-Duty Truck Replacements	\$91,620	\$68,715	0.9
Angel Brothers Enterprises	16 Heavy-Duty Truck Replacements	\$960,000	\$712,883	16.67
APR Acquisitions	11 Heavy-Duty Truck Replacements	\$440,760	\$300,418	2.64
Arbor Care	2 Heavy-Duty Truck Replacements	\$78,990	\$59,243	1.09
Baulch Sandpits	1 Heavy-Duty Truck Replacement	\$62,000	\$38,483	0.73
Bealine Service Co.	24 Heavy-Duty Truck Replacements	\$1,161,480	\$871,110	13.75
Bell Hot Shot Delivery Service	4 Heavy-Duty Truck Replacements	\$248,000	\$186,000	2.22

Bison Building Materials	49 Heavy-Duty Truck Replacements	\$2,202,515	\$1,651,886	23.34
Brazos River Constructors LP	1 Heavy-Duty Truck Replacement	\$39,495	\$29,621	0.22
Brazosport ISD	21 School Bus Replacements	\$829,395	\$533,737	3.56
Brookside Equipment Sales Inc.	1 Heavy-Duty Truck Replacement	\$67,500	\$50,625	0.76
Builders Gypsum Supply	31 Heavy-Duty Truck Replacements	\$1,865,750	\$1,399,313	10.52
Burks Concrete Contractors, Inc.	6 Heavy-Duty Truck Replacements	\$496,000	\$372,000	6.94
Campbell Transportation Services	10 Heavy-Duty Truck Replacements	\$625,000	\$468,750	4.74
Castle Trucking	2 Heavy-Duty Truck Replacements	\$125,000	\$93,750	1.44
Cemex	76 Heavy-Duty Truck Replacements	\$3,481,560	\$2,611,170	51.56
Champion Rentals	1 Heavy-Duty Truck Replacement	\$45,810	\$34,358	0.37
Charles LaMarr Trucking Inc.	6 Heavy-Duty Truck Replacements	\$436,800	\$327,600	7.44
Cherry Concrete	7 Heavy-Duty Truck Replacements	\$473,200	\$349,527	6.84
Cherry Concrete	3 Heavy-Duty Truck Replacements	\$246,000	\$131,763	1.882
Cherry Concrete	1 Heavy-Duty Truck Replacement	\$67,600	\$49,752	0.711
City of Houston Parks & Recreation	2 Heavy-Duty Truck Replacements	\$135,000	\$51,433	0.34
City of Houston Parks & Recreation	7 Replacements Light-Duty Diesel Trucks	\$47,600	\$33,577	0.277
City of Lake Jackson	2 Heavy-Duty Truck Replacements	\$115,162	\$22,350	0.15
City of Lake Jackson	3 Heavy-Duty Truck Replacements	\$175,250	\$131,250	1.14
City of Lake Jackson	3 Heavy-Duty Truck Replacements	\$180,000	\$107,663	0.96
Clear Creek ISD	41 School Bus Replacements	\$1,619,295	\$770,100	5.13
Columbia-Brazoria ISD	10 School Bus Retrofits	\$29,810	\$0	0.0027
Con Rock Ready Mix Inc.	3 Heavy-Duty Truck Replacements	\$186,000	\$139,500	2.82
Conroe ISD	40 School Bus Replacements	\$1,488,840	\$912,450	6.08

Conroe ISD	8 School Bus Replacements	\$360,000	\$191,828	0.81
Conroe ISD	4 School Bus Replacements	\$333,888	\$0	0.462
Cooper's Sanitation Service	3 Heavy-Duty Truck Replacements	\$124,800	\$93,600	1.51
Craig & Heidt Inc.	1 Heavy-Duty Truck Replacement	\$62,000	\$46,500	0.79
Cy-Fair ISD	4 School Bus Replacements	\$157,980	\$42,781	0.51
Cy-Fair ISD	3 School Bus Replacements	\$254,913	\$0	0.32
Damon ISD	1 School Bus Replacements	\$96,962	\$0	0.07
Danbury ISD	2 School Bus Replacements	\$160,000	\$0	1.31
Danbury ISD	1 School Bus Replacement, 1 Retrofit	\$86,907	\$25,193	0.168
David Halewyne	1 Heavy-Duty Truck Replacement	\$72,800	\$54,600	1.22
Deer Park Lumber	3 Heavy-Duty Truck Replacements	\$118,485	\$88,864	0.77
Del Papa Distributing Co.	12 Heavy-Duty Truck Replacements	\$482,840	\$362,130	5.98
Del Papa Distributing Co.	1 Heavy-Duty Truck Replacement	\$39,495	\$29,621	0.59
Dickinson ISD	7 School Bus Replacements	\$276,465	\$117,482	0.78
Dienst Distributing	3 Heavy-Duty Truck Replacements	\$170,400	\$34,851	0.5
Dienst Distributing Company	11 Heavy-Duty Truck Replacements	\$439,900	\$210,888	1.41
Disposal Doctor Inc.	3 Heavy-Duty Truck Replacements	\$186,000	\$139,500	4.59
Dorsett Brothers Concrete Supply Inc.	44 Heavy-Duty Truck Replacements	\$2,015,640	\$1,511,730	23.31
DrilQuip	2 Heavy-Duty Truck Replacements	\$156,000	\$74,855	1.07
Earth Material Services	10 Heavy-Duty Truck Replacements	\$620,000	\$465,000	11.15
Farmer's Copper & Industrial Supply	2 Heavy-Duty Truck Replacements	\$85,305	\$63,979	1
Faust Distributing	10 Heavy-Duty Truck Replacements	\$307,580	\$163,843	1.09
Faust Distributing	10 Heavy-Duty Truck Replacements	\$341,645	\$256,233	2.99
Faust Distributing	6 Heavy-Duty Truck Replacements	\$340,800	\$65,257	0.93
Fort Bend County	5 Heavy-Duty Truck Replacements	\$292,500	\$219,375	3.71
Fort Bend County	5 Heavy-Duty Truck Replacements	\$345,000	\$241,793	2.06
Fort Bend ISD	18 School Bus Replacements	\$710,910	\$90,783	0.61
Fox Metals & Alloys Inc.	2 Heavy-Duty Truck Replacements	\$91,620	\$68,715	1.02
Frito Lay	18 Heavy-Duty Truck Replacements	\$824,580	\$618,435	19.81
Galena Park ISD	7 School Bus Replacements	\$276,465	\$120,000	0.8
Galena Park ISD	6 School Bus Replacements	\$236,970	\$63,250	0.85
Galveston ISD	2 School Bus Replacements	\$206,855	\$0	0.15

Golbow's Garage Inc.	1 Heavy-Duty Truck Replacement	\$69,500	\$52,125	1.254
GOPDQ, NET, LLC	14 Heavy-Duty Truck Replacements	\$561,830	\$421,373	7.31
Griffin & Associates	1 Heavy-Duty Truck Replacement	\$62,500	\$20,098	0.29
Grisham Grading Inc.	10 Heavy-Duty Truck Replacements	\$620,000	\$465,000	6.36
Houston Distributing Company	46 Heavy-Duty Truck Replacements	\$1,816,770	\$1,090,560	7.27
Houston ISD	80 School Bus Replacements	\$2,977,680	\$2,233,260	12.66
Humble ISD	4 School Bus Replacements	\$340,000	\$105,892	0.64
Idealease of Houston	52 Heavy-Duty Truck Replacements	\$2,236,615	\$1,677,461	17.75
Isbell Equipment	2 Heavy-Duty Truck Replacements	\$120,200	\$53,260	0.76
ISC Building Materials	3 Heavy-Duty Truck Replacements	\$131,115	\$98,336	1.19
Jetco Delivery	24 Heavy-Duty Truck Replacements	\$1,064,725	\$798,544	12.2
Jetco Delivery	13 Heavy-Duty Truck Replacements	\$780,000	\$585,000	15.52
Jetco Delivery	2 Heavy-Duty Truck Replacements	\$135,000	\$101,250	2.58
Jetco Delivery	1 Heavy-Duty Truck Replacement	\$71,398	\$53,549	2.58
JTB Services	10 Heavy-Duty Truck Replacements	\$620,000	\$437,408	9.33
JTB Services	2 Heavy-Duty Truck Replacements	\$156,000	\$115,921	1.81
K & S Contracting Inc.	2 Heavy-Duty Truck Replacements	\$113,600	\$9,986	0.14
K3 Resources	4 Heavy-Duty Truck Replacements	\$240,000	\$180,000	4.18
Kelly Bradley Inc	1 Heavy-Duty Truck Replacement	\$78,000	\$46,061	0.658
KIC Transportation	3 Heavy-Duty Truck Replacements	\$145,185	\$108,889	0.88
Klein ISD	18 School Bus Replacements	\$710,910	\$285,034	1.9
Klein ISD	15 School Bus Replacements	\$592,425	\$295,050	1.97
Klein ISD	4 School Bus Replacements	\$352,812	\$98,515	0.66
Koy Concrete Ltd.	10 Heavy-Duty Truck Replacements	\$458,100	\$343,575	3.37
La Roca Investments	10 Heavy-Duty Truck Replacements	\$600,000	\$357,165	6.84
Leeland Friedrichsen	1 Heavy-Duty Truck Replacement	\$74,600	\$55,950	1.05
Lone Wolf Transportation	1 Heavy-Duty Truck Replacement	\$62,500	\$29,955	0.43
Luis Beltran Trucking	2 Heavy-Duty Truck Replacements	\$156,000	\$115,921	1.807
Mabe's Hauling	2 Heavy-Duty Truck Replacements	\$124,000	\$93,000	2.51
Mabe's Hauling	2 Heavy-Duty Truck Replacements	\$124,000	\$93,000	2.41
Magnolia ISD	3 School Bus Replacements	\$120,000	\$83,373	0.568

Magnolia ISD	7 School Bus Retrofits	\$5,638	\$0	0
Mainland Concrete Inc.	5 Heavy-Duty Truck Replacements	\$310,000	\$232,500	5.09
MAS Resources	1 Heavy-Duty Truck Replacement	\$60,000	\$45,000	1.39
Megasand Enterprises	1 Heavy-Duty Truck Replacement	\$60,000	\$45,000	1.33
Megasand Enterprises	1 Heavy-Duty Truck Replacement	\$67,600	\$50,700	1.17
Milstead Automotive Ltd.	13 Heavy-Duty Truck Replacements	\$575,735	\$398,978	5.03
Mink Investments	24 Heavy-Duty Truck Replacements	\$1,451,850	\$1,088,887	17.85
Modern Method Gunite	1 Heavy-Duty Truck Replacement	\$48,395	\$36,296	2.03
Modern Method Gunite	4 Heavy-Duty Truck Replacements	\$300,000	\$185,708	3.62
Montalbano	5 Heavy-Duty Truck Replacements	\$153,790	\$115,343	1.19
Montalbano	4 Heavy-Duty Truck Replacements	\$135,592	\$101,694	1.76
Mueller Water Conditioning Inc.	1 Heavy-Duty Truck Replacement	\$62,500	\$20,438	0.29
N.E.C. Construction	1 Heavy-Duty Truck Replacement	\$78,000	\$58,500	1.2
Nation Waste Inc.	2 Heavy-Duty Truck Replacements	\$124,000	\$93,000	2.83
Nino Modular Construction	7 Heavy-Duty Truck Replacements	\$522,200	\$355,988	5.61
North Forest ISD	11 School Bus Replacements	\$407,000	\$305,250	2.24
Our Lady Queen of Peace Catholic School	1 School Bus Replacement	\$92,495	\$0	0.03
Palletized Trucking Inc.	17 Heavy-Duty Truck Replacements	\$1,054,000	\$790,500	11.96
Pasadena ISD	1 School Bus Replacements	\$82,249	\$0	0.11
Precab Inc.	1 Heavy-Duty Truck Replacement	\$62,500	\$24,227	0.35
R. S. Concrete	25 Heavy-Duty Truck Replacements	\$1,674,000	\$1,255,500	35.26
R. S. Concrete	1 Heavy-Duty Truck Replacement	\$682,000	\$511,500	9.7
R. S. Concrete	5 Heavy-Duty Truck Replacements	\$364,000	\$273,000	4.8
R. S. Concrete	10 Heavy-Duty Truck Replacements	\$800,800	\$600,600	9.09
Rainbow Rider Enterprises	4 Heavy-Duty Truck Replacements	\$248,000	\$186,000	4.44
Rainbow Rider Enterprises	1 Heavy-Duty Truck Replacement	\$62,000	\$46,500	1.48
Richway Cartage	15 Heavy-Duty Truck Replacements	\$725,925	\$544,444	7.4
Richway Cartage	20 Heavy-Duty Truck Replacements	\$1,240,000	\$929,385	21.62

Robles Exhaust Co.	1 Heavy-Duty Truck Replacement	\$62,500	\$21,132	0.3
Schultz Brothers Inc.	5 Heavy-Duty Truck Replacements	\$236,805	\$177,604	4.63
Selwyn Lalla	2 Heavy-Duty Truck Replacements	\$124,000	\$93,000	3.26
Service Steel Transport LLC	9 Heavy-Duty Truck Replacements	\$435,555	\$326,666	12.89
Shawnee Trees	1 Heavy-Duty Truck Replacement	\$20,000	\$15,000	0.232
Sheldon ISD	3 School Bus Replacements	\$111,000	\$64,500	0.43
Sheldon ISD	1 School Bus Replacements	\$85,000	\$14,431	0.12
Silver Eagle Distributors	67 Heavy-Duty Truck Replacements	\$2,775,675	\$2,081,756	14.4
Silver Eagle Distributors	6 Heavy-Duty Truck Replacements	\$274,860	\$206,145	1.57
Silver Eagle Distributors	10 Heavy-Duty Truck Replacements	\$505,900	\$91,496	1.31
Silver Eagle Distributors	3 Heavy-Duty Truck Replacements	\$202,800	\$70,197	1
Silver Eagle Distributors	3 Heavy-Duty Truck Replacements	\$202,500	\$83,424	1.191
South Bay Gunite	3 Heavy-Duty Truck Replacements	\$263,900	\$197,925	4.19
Southern Star	20 Heavy-Duty Truck Replacements	\$1,456,000	\$1,092,000	19.92
Southwaste	1 Heavy-Duty Truck Replacement	\$60,000	\$37,716	0.82
Special Distribution Service Inc.	25 Heavy-Duty Truck Replacements	\$1,123,200	\$842,400	7.37
Spring ISD	1 School Bus Replacement	\$95,000	\$33,903	0.226
Sprint Logistics	3 Heavy-Duty Truck Replacements	\$176,700	\$132,525	2.86
SprintWaste	7 Heavy-Duty Truck Replacements	\$549,500	\$369,544	5.28
Stahlman Lumber Co	1 Heavy-Duty Truck Replacement	\$39,495	\$29,621	0.2
State Sign	4 Heavy-Duty Truck Replacements	\$197,475	\$108,900	0.73
Sweeny ISD	2 School Bus Replacements	\$80,000	\$55,200	0.368
Sysco Food Services of Houston LP	44 Heavy-Duty Truck Replacements	\$1,876,710	\$1,162,248	7.86
T & L Distributing	4 Heavy-Duty Truck Replacements	\$176,925	\$132,694	4.02
Texas Aggregate & Base Materials	1 Heavy-Duty Truck Replacement	\$62,000	\$28,403	0.54
Texas TransEastern	8 Heavy-Duty Truck Replacements	\$366,480	\$274,860	8.78
Texas TransEastern	9 Heavy-Duty Truck Replacements	\$540,000	\$405,000	12.61
Thorpe Corporation	3 Heavy-Duty Truck Replacements	\$118,485	\$88,864	0.6
Tomball ISD	2 School Bus Replacements	\$74,442	\$32,000	0.21
Tomball ISD	1 School Bus Replacements	\$80,000	\$21,859	0.15
Tony Abrego Sand Co.	1 Heavy-Duty Truck Replacement	\$85,750	\$64,313	1.775
Trimac Transportation Inc.	5 Heavy-Duty Truck Replacements	\$2,308,038	\$877,200	13.65

Turner Brothers	13 Heavy-Duty Truck Replacements	\$402,486	\$712,264	5.75
UVAC Equipment Rentals	1 Heavy-Duty Truck Replacement	\$48,395	\$36,296	0.54
Volunteer Trucking	1 Heavy-Duty Truck Replacement	\$56,800	\$42,600	0.66
W. M. Dewey & Son	7 Heavy-Duty Truck Replacements	\$473,200	\$268,735	3.84
W. M. Dewey & Son	12 Heavy-Duty Truck Replacements	\$580,740	\$435,555	4.18
W. M. Dewey & Son	10 Heavy-Duty Truck Replacements	\$600,000	\$325,305	6.33
Waller ISD	7 School Bus Replacements	\$276,465	\$116,813	0.78
Waller ISD	3 School Bus Replacements	\$180,000	\$132,116	0.93
Whitecap Construction Inc.	5 Heavy-Duty Truck Replacements	\$215,275	\$161,456	1.96
William Hamann Trucking	1 Heavy-Duty Truck Replacement	\$56,800	\$36,317	0.519
Total (July, 2009)	1521 Vehicles/ Engines	\$76,363,022	\$50,676,713	741.31 tpy 2.97 tpd¹

¹ – Per TERP calculation, 250 days per year calculated.

Commute Solutions

Commute Solutions, a program of the Houston-Galveston Area Council includes a variety of initiatives aimed at reducing single occupancy vehicle travel, particularly among commuters. Below are estimates and data used in the evaluation of the various Commute Solutions' programs and their benefits. Average NOx and VOC emission reductions (tpd) from March 2008 - March 2009 are estimated for the following Commute Solutions programs:

- Vanpooling (Regional Program operated by METRO)
- Rideshare incentive (NuRide)
- Telework
- The Woodlands Township Circulator (Pilot Project)

As documented here, the vanpool program is generating the largest reductions, approximately .12497 tons per day of NOx and approximately .14593 tons per day of VOCs. The NuRide program is generating reductions of approximately .01237 tons per day of NOx and approximately .01445 tons per day of VOCs. NuRide has recently added the capacity to track trips reduced as a result of Telework, replacing the error prone trip tracker used previously. Unfortunately we did not receive much hard data on trips reduced by telework for the current period; however we combined the precise data we have with the data calculations for CompuCom which were based on best estimated data gathered from conversing with Bruce. The Telework program is generating reductions of at least .00764 tons per day of NOx and at least .00892 tons per day of VOCs. The Woodlands Township Circulator is providing reductions of approximately .00094 tons per day of NOx and approximately .00149 tons per day of VOCs.

Regional Vanpool Program

Summary of Strategy: The vanpool program provides incentives for commuters to use vans meet riders at a central location, such as a park and ride lot, or other pick up points. The commutes are typical long distance and collect riders in higher numbers than a carpool program.

Status: Using data provided by Metro, who operates the vanpool program, as of March, 2009, the vanpool program now includes a total of 757 vans serving 7,679 riders. The average round trip distance of each van is 27 miles and there are now on average of 10.4 riders per van. On average there are 21.6 workdays per month, so in March 2009 this program reduced an average of 252,812.5 miles per day of passenger vehicle travel.

Continued Implementation: The operation of the vanpool program has been consolidated under Metro in the last two years and plans to rebrand the program are being implemented, as is an aggressive new advertising campaign that aims to expand the program. The emissions reductions shown here reflect average NOx and VOC emission reductions (tpd) from March 2008 - March 2009 and do not project for further expansion.

Sample Calculation: The emission reduction is determined by taking the Passenger Miles Traveled and subtracting the Vehicle Miles Traveled to get the VMT reduced, which are then used to calculate the emission reductions.

6,278,310 passenger miles traveled minus 817,560 vehicle miles traveled gives us 5,460,750 vehicle miles traveled (VMT) reduced for the month of March 2009. The VMT reduction (5,460,750) is then multiplied by (0.55509948 g/mile VOC or 0.47538003 g/miles NOx) and then multiplied by the factor for conversion of grams to tons (.001*.001102), the product of which is divided by the average number of workdays per month (21.6) = 0.15465 tpd of VOC and 0.13244 tpd NOx.

The average NOx and VOC emission reductions (tpd) from March 2008 - March 2009 are .12497 tons per day of NOx and .14593 ton per days on VOCs.

Rideshare Incentive

Summary of Strategy: H-GAC launched an innovative rideshare incentive program in July, 2005, using the NuRide system. This system better allows commuters to find others with similar commutes to increase vehicle occupancy.

Status: According to the NuRide reporting system, the program reduced 6,631,832 miles of travel in the period beginning in March 2008 and ending in March 2009. NuRide also subtracts the impact of vanpools on their trip and VMT reduction calculations to avoid double counting with the vanpool incentive program.

Continued Implementation: In March 2008 there were 3,952 NuRiders and by March 2009 there were 5,080, a participation increase of 28.5 percent. The program was halted for a period of approximately 6 months so that a study could be conducted to gauge the program's effectiveness. The study, done by TTI, deemed the NuRide program effective; however, NuRide has had to struggle to regain their momentum.

Sample Calculation: At the current rate of reduction of 25,487.176 miles per day, the NuRide program is reducing 0.01335 tons per day of NOx and 0.01559 tons per day of VOC.

Telework

Summary of Strategy:

Status: The Telework estimates are based on the data that could be extracted from Trip Tracker (data for at least two companies was inaccessible due to program errors and many companies were not using the system because it was too cumbersome) and NuRide for the period from March 2008 - March 2009. NuRide added the capacity to track trips reduced as a result of Telework in December of 2008 and user awareness of this new capability is coming gradually. From the NuRide provided vehicle miles reduced, I subtracted those logged into the NuRide system by employees of CompuCom. CompuCom's emission reductions were then separately calculated based on a detailed discussion of the roll out of the Telework program to their employees. The average number of miles averted per trip was obtained from the information NuRide had for CompuCom employees from December of 2008 through March of 2009.

Status: CompuCom has a telework program in which 100 workers work solely from home, and over 161 workers spend only two days per month at the office. The Telework program also notable includes MD Anderson and Hewlett Packard.

Continued Implementation: CompuCom has started a second year long contract to expand their Telework capacity even further and grant funds are still available for this purpose.

Sample Calculation: Given an average trip distance of 36.2 miles, 100 teleworkers teleworking 21.6 days a month on average, you get a monthly reduction of 156,384 VMT reduced. This results in an emission reduction of 0.00379 tons per day of NOx and .00443 tons per day of VOCs.

Pilot Project

Summary of Strategy: H-GAC issued a three year request for proposals for innovative commuter pilot and transit projects. Under the RFP H-GAC will help fund operations for up to three years for new transit services in the region.

Status: The Pilot Project estimate is based on the VMT reduced and the VMT added as provided by the contractor overseeing the operation of the service (The Woodlands Township). The VMT reduced is multiplied by the composite passenger fleet emissions factors. The VMT added by the trolleys are then multiplied by the composite emissions rates for the vehicles (in this case they are propane trolleys). The trolley emissions added are then subtracted from the passenger emissions reductions to provide the net emissions reductions, which are then converted into tons per day.

Continued Implementation: A number of local governments have expressed interest in submitting proposals for this program, with two Park & Rides having begun operation in the last few months.

Sample Calculation: 55,783 VMT reduced * (0.47538003 g/miles NOx or 0.55509948 g/mile VOC) * (.001*.001102) = .02922 tons of NOx and .03412 tons of VOC reduced

3,155 VMT Added * (2.4 g/mile NOx or .1378 g/mi VOC) * (.001*.001102)
= .00834 tons of NOx and .00048 tons of VOC added

(.02922 tons of NOx and .03412 tons of VOC reduced –
.00834 tons of NOx and .00048 tons of VOC added)/ 21.6
=

.00097 tpd NOx and .00156 tpd of VOC reduced